DOCUMENT RESUME

ED 338 832 CE 059 522

TITLE	Carpentry. Ohio's Competency Analysis Profile.
INSTITUTION	Ohio State Univ., Columbus. Vocational Instructional Materials Lab.
SPONS AGENCY	Ohio State Dept. of Education, Columbus. Div. of Vocational and Career Education.
PUB DATE	91
NOTE	30p.; For related documents, see CE 059 517-542.
AVAILABLE FROM	Vocational Instructional Materials Lab, Ohio State University, 1900 Kenny Road, Columbus, OH 43210-1090 ($1.50).
PUB TYPE	Guides - Classroom Use - Teaching Guides (For Teacher) (052)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Carpentry; Competence; *Competency Based Education; *Construction (Process); Employment Potential; Entry Workers; High Schools; Job Analysis; *Job Skills; Promotion (Occupational); Statewide Planning; Task Analysis; Vocational Education
IDENTIFIERS	DACUM Process; Ohio

ABSTRACT

This comprehensive and verified employer competency list was developed from a modified DACUM (Developing a Curriculum) process involving business, industry, labor, and community agency representatives from Ohio. This competency list contains 14 units (with or without subunits), competencies, and competency builders that identify the occupational, academic, and employability skills needed to enter the occupation of carpentry. Within the outline are three levels of items: core (required, the basis for state vocational competency tests); advancing (needed to advance in an occupation); and futuring (needed to enter and remain in a given occupation 3 to 4 years from now). The units cover the following: (1) basic carpentry procedures; (2) layout work; (3) footer and foundation walls; (4) floor framing; (5) wall framing; (6) roof framing; (7) roofing; (8) exterior finish; (9) insulation; (10) interior finish; (11) stairs; (12) energy-efficient construction; (13) special carpentry applications; and (14) employability skills. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED338832

OCAP

OHIO'S COMPETENCY ANALYSIS PROFILE

CARPENTRY

Employer Verification Panel

Marty Brownlee, *American Pre-Cut Buildings, Inc.*, Toledo, Ohio

Thomas A. Buzek, *Richard Goettle, Inc.*, Cincinnati, Ohio

Arthur H. Galea, Jr., *S.W. Ohio Joint Apprenticeship and Training Council,* Cincinnati, Ohio

Joseph B. Girard, *McDaniel's Construction Corporation,* Columbuis, Ohio

Steve Hiller, *Allied Construction Corporation,* Cincinnati, Ohio

Thomas Serra, *Ogenco Contruction Company,* North Canton, Ohio

Norm Shutt, *Shutt Builders, Inc.*, Lima, Ohio

Kathy Temple, *Setterlin Construction Company,* Columbus, Ohio

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CE 059 522

Ohio's Future at Work

Division of Vocational and Career Education
Ohio Department of Education

Vocational Instructional Materials Laboratory
Center on Education and Training for Employment
THE OHIO STATE UNIVERSITY

BEST COPY AVAILABLE

What is OCAP?

"A comprehensive and verified employer competency list will be developed and kept current for each program." This is the second objective of Imperative 3 of the *Action Plan for Accelerating the Modernization of Vocational Education: Ohio's Future at Work*. Ohio's Competency Analysis Profile (OCAP) lists are the Division of Vocational and Career Education's response to that objective. OCAP lists evolve from a modified DACUM process involving business, industry, labor, and community agency representatives from throughout Ohio. The OCAP process is directed by the Vocational Instructional Materials Laboratory at The Ohio State University's Center on Education and Training for Employment.

How is OCAP used?

Each OCAP contains units (with and without subunits), competencies, and competency builders that identify the occupational, academic, and employability skills needed to enter a given occupation or occupational area. Within that outline there are three levels of items: core, advancing, and futuring. Core items are essential to entry-level employment. These items are required to be taught and will be the basis for questions on the state vocational competency tests (scheduled to begin in FY93). Advancing items (marked with one asterisk) are needed to advance in a given occupation. Futuring items (marked with two asterisks) are needed to enter and remain in a given occupation three to four years from now.

Districts may add as many units, subunits, competencies, and competency builders as desired to reflect local employment needs, trends, and specialties. Local advisory committees should be actively involved in the identification and verification of additional items. Using OCAP lists, instructors will be able to formulate their courses of study and monitor competency gains via the new competency testing program.

The **Employability Skills** portion of this list was verified by the following employer panel:

Gary J. Corrigan, *Dana Corporation*, Ottawa Lake, Michigan
David Crooks, *Bowling Green State University Union Food Service*, Bowling Green, Ohio
Pat Doerman, *Farrow's Harley-Davidson*, Columbus, Ohio
William Gockenbach, *Kaiser Aluminum*, Heath, Ohio
Patsy Hathaway, *CBS Personnel Services, Inc.*, Dayton, Ohio
Marlyn Harman, *Marlyn Harman & Associates*, Cleveland, Ohio
Thomas R. Hyldahl, *Toledo Edison*, Toledo, Ohio
Carol C. James, *Ohio Contractors Association*, Columbus, Ohio
James Mack, *Chrysler Jeep Assembly*, Toledo, Ohio
Rocky McCoy, *Ironton-Lawrence Co. Community Action Organization*, Ironton, Ohio
James Needs, *Independent Crop Producer*, Upper Sandusky, Ohio
Ronald Simmons, *Former GM Executive*, Warren Ohio

BEST COPY AVAILABLE

OHIO COMPETENCY ANALYSIS PROFILE

CARPENTRY

UNIT 1: Basic Carpentry Procedures

COMPETENCY 1.0.1: Acquire tools and tool kit

COMPETENCY BUILDERS:

1.0.1.1 Identify required tools
1.0.1.2 Secure competitive bids
1.0.1.3 Purchase tools and tool kit

COMPETENCY 1.0.2: Use personal safety equipment according to Ohio Safety and Health Administration (OSHA) standards

COMPETENCY BUILDERS:

1.0.2.1 View graphic audiovisual materials regarding safety
1.0.2.2 Wear side-shield safety glasses
1.0.2.3 Wear ear protection
1.0.2.4 Wear hard-toed shoes
1.0.2.5 Wear hard hat
1.0.2.6 Wear appropriate dust mask
1.0.2.7 Wear gloves
1.0.2.8 Wear appropriate clothing
1.0.2.9 Avoid loose-fitting, unbuttoned, or frayed clothing and dangling jewelry
1.0.2.10 Secure long hair

COMPETENCY 1.0.3: Demonstrate use of safety and fire equipment

COMPETENCY BUILDERS:

1.0.3.1 Check power sources for potential safety problems
1.0.3.2 Use fire extinguishers
1.0.3.3 Demonstrate basic first aid
1.0.3.4 Use power kill switches
1.0.3.5 Check all safety apparatus and equipment
1.0.3.6 Use safety apparatus and equipment
1.0.3.7 Conduct routine safety inspections

* Advancing
** Futuring

COMPETENCY 1.0.4: Demonstrate identification, handling, use, and disposal of hazardous materials

COMPETENCY BUILDERS:

1.0.4.1 Read material safety data sheet (MSDS) for each hazardous material
1.0.4.2 Follow procedures specified on MSDS
1.0.4.3 Dispose of hazardous materials according to Environmental Protection Agency (EPA) standards

COMPETENCY 1.0.5: Use, handle, and store all tools, materials, and equipment

COMPETENCY BUILDERS:

1.0.5.1 Identify potential hazards of hand tools
1.0.5.2 Demonstrate safe use of all hand tools
1.0.5.3 Demonstrate safe handling and lifting methods
1.0.5.4 Use power tools
1.0.5.5 Use power machinery
1.0.5.6 Maintain and check all hand tools
1.0.5.7 Maintain and check all power equipment
1.0.5.8 Demonstrate pride in use and care of tools and equipment

UNIT 2: Layout Work

COMPETENCY 2.0.1: Use construction drawings

COMPETENCY BUILDERS:

2.0.1.1 Identify types of drawings
2.0.1.2 Use scales
2.0.1.3 Use sections and details
2.0.1.4 Interpret symbols
2.0.1.5 Use schedules

COMPETENCY 2.0.2: Use instruments and tools for layout work

COMPETENCY BUILDERS:

2.0.2.1 Use measuring tape
2.0.2.2 Read measuring tape
2.0.2.3 Use framing square
2.0.2.4 Use levels
2.0.2.5 Use plumb bob
2.0.2.6 Use chalk box
2.0.2.7 Use builders level

* Advancing
** Futuring

COMPETENCY 2.0.3: Lay out building*

COMPETENCY BUILDERS:

2.0.3.1 Obtain permits*
2.0.3.2 Locate property lines*
2.0.3.3 Clear area*
2.0.3.4 Establish building line*
2.0.3.5 Establish setback*
2.0.3.6 Erect batter board stokes*
2.0.3.7 Install ledger boards*
2.0.3.8 Establish grade*
2.0.3.9 Transfer building lines to ledger board*
2.0.3.10 Cut saw kerf ledger board for building lines*
2.0.3.11 Attach dry lines to kerf*
2.0.3.12 Check diagonal dimensions*

COMPETENCY 2.0.4: Lay out driveway and sidewalks*

COMPETENCY BUILDERS:

2.0.4.1 Read plot plan*
2.0.4.2 Locate sides of driveway*
2.0.4.3 Place stakes*
2.0.4.4 Establish elevations*
2.0.4.5 Cut and install base material*

UNIT 3: Footer and Foundation Walls

COMPETENCY 3.0.1: Identify and measure materials for footer forms

COMPETENCY BUILDERS:

3.0.1.1 Determine sizing for footers
3.0.1.2 Determine quantity of materials needed

COMPETENCY 3.0.2: Construct wall forms

COMPETENCY BUILDERS:

3.0.2.1 Determine sizing for wall forms
3.0.2.2 Determine quantity of materials needed
3.0.2.3 Determine job requirements
3.0.2.4 Set line and drive stakes*
3.0.2.5 Cut materials to size*
3.0.2.6 Nail forms in place*

* Advancing
** Futuring

COMPETENCY 3.0.3: Construct entrance platforms and steps*

COMPETENCY BUILDERS:

3.0.3.1 Determine job requirements*
3.0.3.2 Lay out work*
3.0.3.3 Drive stakes*
3.0.3.4 Erect forms*
3.0.3.5 Brace walls to alignment*
3.0.3.6 Install risers*
3.0.3.7 Install landing forms*
3.0.3.8 Brace landing forms*
3.0.3.9 Dismantle forms*

COMPETENCY 3.0.4: Waterproof foundations*

COMPETENCY BUILDERS:

3.0.4.1 Clean walls*
3.0.4.2 Fill holes*
3.0.4.3 Apply material*

COMPETENCY 3.0.5: Construct and weatherproof all-weather wood foundation*

COMPETENCY BUILDERS:

3.0.5.1 Prepare footer trench*
3.0.5.2 Install gravel pad*
3.0.5.3 Install footing plate*
3.0.5.4 Lay out and construct foundation walls*
3.0.5.5 Erect foundation walls*
3.0.5.6 Caulk plywood joints*
3.0.5.7 Install polyethylene film moisture barrier*

COMPETENCY 3.0.6: Construct forms for slabs and paving*

COMPETENCY BUILDERS:

3.0.6.1 Determine job requirements*
3.0.6.2 Level base material*
3.0.6.3 Lay out and erect forms*
3.0.6.4 Brace forms*
3.0.6.5 Install reinforcing material*
3.0.6.6 Remove forms*

* Advancing
** Futuring

COMPETENCY 3.0.7: Lay out and form sidewalks and driveways*

COMPETENCY BUILDERS:

3.0.7.1 Determine job requirements*
3.0.7.2 Spread gravel*
3.0.7.3 Drive stakes*
3.0.7.4 Affix form material to stakes*
3.0.7.5 Remove forms*

UNIT 4: Floor Framing

COMPETENCY 4.0.1: Construct and install sills and sill sealer

COMPETENCY BUILDERS:

4.0.1.1 Determine job requirements
4.0.1.2 Clean top of wall
4.0.1.3 Cut sealer to lengths
4.0.1.4 Select needed material
4.0.1.5 Cut sill
4.0.1.6 Fasten sill in place

COMPETENCY 4.0.2: Erect girders, beams, and columns

COMPETENCY BUILDERS:

4.0.2.1 Install columns
4.0.2.2 Install temporary braces
4.0.2.3 Install girders or beams

COMPETENCY 4.0.3: Install floor joist

COMPETENCY BUILDERS:

4.0.3.1 Determine job requirements
4.0.3.2 Lay out floor joist
4.0.3.3 Cut floor joist
4.0.3.4 Install joist headers and trimmers

COMPETENCY 4.0.4: Install bridging

COMPETENCY BUILDERS:

4.0.4.1 Determine job requirements
4.0.4.2 Cut bridging
4.0.4.3 Install X-bridging
4.0.4.4 Install solid bridging
4.0.4.5 Install metal bridging

* Advancing
** Futuring

COMPETENCY 4.0.5: Install subflooring

COMPETENCY BUILDERS:

4.0.5.1 Align floor sheeting
4.0.5.2 Fasten floor sheeting to joists
4.0.5.3 Trim excess around openings

UNIT 5: Wall Framing

COMPETENCY 5.0.1: Lay out walls and rough openings

COMPETENCY BUILDERS:

5.0.1.1 Determine job requirements
5.0.1.2 Prepare subfloor
5.0.1.3 Strike wall lines
5.0.1.4 Locate and mark rough openings

COMPETENCY 5.0.2: Build and erect walls and install rough openings

COMPETENCY BUILDERS:

5.0.2.1 Select materials
5.0.2.2 Cut and assemble wall sections
5.0.2.3 Erect wall sections
5.0.2.4 Install wind bracing
5.0.2.5 Install exterior covering

* Advancing
** Futuring

UNIT 6: Roof Framing

COMPETENCY 6.0.1: Lay out, cut, and install ceiling joists and rafters

COMPETENCY BUILDERS:

6.0.1.1 Select materials
6.0.1.2 Determine length of ceiling joists
6.0.1.3 Cut and install ceiling joists
6.0.1.4 Determine length of common rafters
6.0.1.5 Cut common rafters
6.0.1.6 Determine framing member requirements
6.0.1.7 Lay out top plate
6.0.1.8 Lay out ridge board
6.0.1.9 Lay out hip rafters
6.0.1.10 Lay out valley rafters
6.0.1.11 Lay out jack rafters
6.0.1.12 Cut rafters
6.0.1.13 Position rafters
6.0.1.14 Install rafters
6.0.1.15 Install gable-end studs and outlookers

COMPETENCY 6.0.2: Fabricate and install roof trusses*

COMPETENCY BUILDERS:

6.0.2.1 Lay out roof truss*
6.0.2.2 Cut truss parts*
6.0.2.3 Assemble truss*
6.0.2.4 Lay out top plate for truss placement*
6.0.2.5 Install trusses*

COMPETENCY 6.0.3: Install roof sheathing

COMPETENCY BUILDERS:

6.0.3.1 Lay out and install saddles and crickets
6.0.3.2 Lay out sheathing
6.0.3.3 Cut sheathing
6.0.3.4 Install sheathing

* Advancing
** Futuring

UNIT 7: Roofing

COMPETENCY 7.0.1: Install dripedge and flashing

COMPETENCY BUILDERS:

7.0.1.1 Determine job requirements
7.0.1.2 Assemble materials for dripedge and flashing
7.0.1.3 Install dripedge
7.0.1.4 Bend dripedge to fit pitch of roof
7.0.1.5 Install flashing

COMPETENCY 7.0.2: Install shingles and caps

COMPETENCY BUILDERS:

7.0.2.1 Select materials
7.0.2.2 Determine installation method
7.0.2.3 Determine scaffolding or roof jack requirements
7.0.2.4 Erect scaffolding according to OSHA standards
7.0.2.5 Install valleys
7.0.2.6 Install starter strip
7.0.2.7 Install first course of shingles
7.0.2.8 Install roof jacks
7.0.2.9 Install succeeding courses of shingles
7.0.2.10 Install hip and ridge caps

COMPETENCY 7.0.3: Install roll roofing*

COMPETENCY BUILDERS:

7.0.3.1 Select materials*
7.0.3.2 Determine installation method*
7.0.3.3 Determine scaffolding or roof jack requirements*
7.0.3.4 Erect scaffolding according to OSHA standards*
7.0.3.5 Install felt paper and valleys*
7.0.3.6 Strike line for first strip*
7.0.3.7 Install starter strip*
7.0.3.8 Install roof jacks according to OSHA standards*
7.0.3.9 Install succeeding strips*
7.0.3.10 Install ridge cap*

* Advancing
** Futuring

COMPETENCY 7.0.4: Install wood shingles*

COMPETENCY BUILDERS:

7.0.4.1 Select materials*
7.0.4.2 Determine installation method*
7.0.4.3 Determine scaffolding or roof jack requirements*
7.0.4.4 Erect scaffolding according to OSHA standards*
7.0.4.5 Install underlay*
7.0.4.6 Install valleys*
7.0.4.7 Install starter course*
7.0.4.8 Install doubler course*
7.0.4.9 Strike chalk line or attach temporary straightedge*
7.0.4.10 Install shingles*
7.0.4.11 Install shingles around flashing and vents*
7.0.4.12 Install ridge cap shingles*

UNIT 8: Exterior Finish

COMPETENCY 8.0.1: Install exterior doors, windows, and hardware

COMPETENCY BUILDERS:

8.0.1.1 Measure for door unit(s)
8.0.1.2 Obtain exterior door unit(s)
8.0.1.3 Install exterior door unit(s) and hardware
8.0.1.4 Measure for window unit(s)
8.0.1.5 Obtain window unit(s)
8.0.1.6 Install window unit(s) and hardware

COMPETENCY 8.0.2: Install fascia, soffits, frieze board, and moldings

COMPETENY BUILDERS:

8.0.2.1 Select fascia
8.0.2.2 Install fascia
8.0.2.3 Select soffit materials
8.0.2.4 Install soffit(s)
8.0.2.5 Select moldings and frieze board
8.0.2.6 Cut and install moldings and frieze board

COMPETENCY 8.0.3: Install wall finish

COMPETENCY BUILDERS:

8.0.3.1 Assemble materials for wall finish
8.0.3.2 Lay out and install wall material

* Advancing
** Futuring

COMPETENCY 8.0.4: Install gutters and downspouts*

COMPETENCY BUILDERS:

8.0.4.1 Lay out gutters*
8.0.4.2 Cut and install gutters*
8.0.4.3 Cut and install downspouts*

UNIT 9: Insulation

COMPETENCY 9.0.1: Ventilate attic and crawl spaces

COMPETENCY BUILDERS:

9.0.1.1 Determine job requirements
9.0.1.2 Select materials
9.0.1.3 Install vents

COMPETENCY 9.0.2: Install thermal insulation and vapor barrier

COMPETENCY BUILDERS:

9.0.2.1 Determine job requirements
9.0.2.2 Select materials and fasteners
9.0.2.3 Install outer vapor barrier
9.0.2.4 Install insulation according to OSHA standards
9.0.2.5 Install inner vapor barrier

UNIT 10: Interior Finish

COMPETENCY 10.0.1: Install gypsum wallboard

COMPETENCY BUILDERS:

10.0.1.1 Determine job requirements
10.0.1.2 Determine installation method
10.0.1.3 Determine type of fastener and drywall compound
10.0.1.4 Measure and cut gypsum wallboard
10.0.1.5 Fasten wallboard
10.0.1.6 Seal joints and fill depressions
10.0.1.7 Sand, coat, and finish wallboard

COMPETENCY 10.0.2: Install wall paneling*

COMPETENCY BUILDERS:

10.0.2.1 Determine job requirements*
10.0.2.2 Determine installation method*
10.0.2.3 Measure and cut paneling*
10.0.2.4 Fasten paneling to wall*
10.0.2.5 Install finish moldings*
10.0.2.6 Fill nail holes*

COMPETENCY 10.0.3: Install suspended ceilings

COMPETENCY BUILDERS:

10.0.3.1 Determine job requirements
10.0.3.2 Select materials
10.0.3.3 Lay out ceiling line
10.0.3.4 Install edge moldings
10.0.3.5 Hang wires
10.0.3.6 Cut and install grid system
10.0.3.7 Install ceiling panels

COMPETENCY 10.0.4: Install finish flooring*

COMPETENCY BUILDERS:

10.0.4.1 Determine job requirements
10.0.4.2 Determine installation method*
10.0.4.3 Cut and install underlayment*
10.0.4.4 Lay out centerline*
10.0.4.5 Spread mastic or cement*
10.0.4.6 Install floor tile*
10.0.4.7 Install kick strips
10.0.4.8 Determine requirements for wood flooring*
10.0.4.9 Prepare subfloor*
10.0.4.10 Install building paper over subfloor*
10.0.4.11 Install strip flooring, plank flooring, or parquet flooring blocks*

COMPETENCY 10.0.5: Install doors

COMPETENCY BUILDERS:

10.0.5.1 Determine job requirements
10.0.5.2 Verify door schedule
10.0.5.3 Install frame
10.0.5.4 Fit and hang door
10.0.5.5 Install stop and casing
10.0.5.6 Install lock set

* Advancing
** Futuring

COMPETENCY 10.0.6: Install window trim

COMPETENCY BUILDERS:

10.0.6.1 Cut and install stool
10.0.6.2 Install side casing
10.0.6.3 Install head casing
10.0.6.4 Install apron

COMPETENCY 10.0.7: Install baseboard and moldings

COMPETENCY BUILDERS:

10.0.7.1 Determine job requirements
10.0.7.2 Cut and install baseboard and shoe mold
10.0.7.3 Cut and install crown mold
10.0.7.4 Cut and install chair rail

COMPETENCY 10.0.8: Install cabinets*

COMPETENCY BUILDERS:

10.0.8.1 Determine job requirements*
10.0.8.2 Verify cabinets received with requirements*
10.0.8.3 Determine electrical and plumbing clearances*
10.0.8.4 Check squareness and plumb of walls*
10.0.8.5 Check level of floor*
10.0.8.6 Set base unit cabinets in location*
10.0.8.7 Fasten base cabinet sections together*
10.0.8.8 Attach cabinets to walls*
10.0.8.9 Locate and mark studs for wall units*
10.0.8.10 Mark and drill backrail to match stud location*
10.0.8.11 Fasten sections together*

UNIT 11: Stairs

COMPETENCY 11.0.1: Design stairway risers, treads, and head clearances

COMPETENCY BUILDERS:

11.0.1.1 Lay out stair story pole
11.0.1.2 Calculate rise and run
11.0.1.3 Determine head height requirements

* Advancing
** Futuring

COMPETENCY 11.0.2: Install stairway

COMPETENCY BUILDERS:

11.0.2.1 Lay out, cut, and install horses (stringers)
11.0.2.2 Lay out, cut, and install skirt boards
11.0.2.3 Lay out, cut, and install treads and risers
11.0.2.4 Lay out, cut, and install moldings, newels, balusters, and handrails

UNIT 12: Energy-Efficient Construction*

COMPETENCY 12.0.1: Construct double exterior walls, foundations, and superinsulated floor framing*

COMPETENCY BUILDERS:

12.0.1.1 Determine job requirements*
12.0.1.2 Install foundation insulation*
12.0.1.3 Install insulated floor frame*
12.0.1.4 Select wall materials*
12.0.1.5 Cut and assemble trimmers and headers*
12.0.1.6 Cut and assemble corner post*
12.0.1.7 Erect, cut, and set walls*
12.0.1.8 Install insulating sheathing tyvek wind barrier*
12.0.1.9 Install raised heel truss, sheathing, and roofing*

COMPETENCY 12.0.2: Install windows and superinsulated doors*

COMPETENCY BUILDERS:

12.0.2.1 Verify and obtain superinsulated door unit*
12.0.2.2 Position and attach door*
12.0.2.3 Verify and obtain window units*
12.0.2.4 Position and attach inner window units*
12.0.2.5 Position and attach outer window units*

COMPETENCY 12.0.3: Superinsulate structures*

COMPETENCY BUILDERS:

12.0.3.1 Determine job requirements*
12.0.3.2 Select materials and fasteners*
12.0.3.3 Install batts in walls*
12.0.3.4 Install two layers of R-30 insulation in ceiling*
12.0.3.5 Install vapor barrier*
12.0.3.6 Install plastic foam boards or sheets*
12.0.3.7 Blow in insulation*

* Advancing
** Futuring

COMPETENCY 12.0.4: Construct underground structure*

COMPETENCY BUILDERS:

12.0.4.1 Verify building site*
12.0.4.2 Install footing forms*
12.0.4.3 Install wall forms*
12.0.4.4 Install roof systems*
12.0.4.5 Apply rubberized materials*
12.0.4.6 Install insulation*

COMPETENCY 12.0.5: Use Arkansas construction method of insulation*

COMPETENCY BUILDERS:

12.0.5.1 Construct energy-efficient foundation and floor frame*
12.0.5.2 Construct 2" x 6" walls 2' on center with metal T-brace*
12.0.5.3 Install energy-efficient sheathing*
12.0.5.4 Install energy trusses, sheathing, and roofing*
12.0.5.5 Install energy-efficient doors and windows*
12.0.5.6 Install insulation and vapor barrier*

COMPETENCY 12.0.6: Install passive solar features*

COMPETENCY BUILDERS:

12.0.6.1 Install energy-efficient windows*
12.0.6.2 Install clestories and skylights*
12.0.6.3 Install greenhouse*
12.0.6.4 Install masonry heat storage*
12.0.6.5 Install water wall*
12.0.6.6 Install Trombe wall*

UNIT 13: Special Carpentry Applications*

COMPETENCY 13.0.1: Install window and door replacements*

COMPETENCY BUILDERS:

13.0.1.1 Determine type and size of unit*
13.0.1.2 Remove existing unit*
13.0.1.3 Adjust rough opening*
13.0.1.4 Position and attach unit*
13.0.1.5 Insulate and seal around unit*
13.0.1.6 Cut, position, and attach steps*

* Advancing
** Futuring

COMPETENCY 13.0.2: Install storm windows and doors*

COMPETENCY BUILDERS:

13.0.2.1 Select unit*
13.0.2.2 Position and attach storm windows
13.0.2.3 Position and attach door units*

COMPETENCY 13.0.3: Install garage doors and power unit*

COMPETENCY BUILDERS:

13.0.3.1 Select garage-door unit*
13.0.3.2 Construct garage-door frame*
13.0.3.3 Position and attach garage-door unit*
13.0.3.4 Install garage-door power unit*

COMPETENCY 13.0.4: Fabricate countertops*

COMPETENCY BUILDERS:

13.0.4.1 Determine job requirements*
13.0.4.2 Select materials*
13.0.4.3 Check base cabinets for level*
13.0.4.4 Level loose cabinets*
13.0.4.5 Cut particle and base underlayment material*
13.0.4.6 Secure underlayment to base cabinets*
13.0.4.7 Cut ledger to edge top*
13.0.4.8 Secure ledger to top*
13.0.4.9 Precut laminate material*
13.0.4.10 Apply mastic*
13.0.4.11 Place drying strips*
13.0.4.12 Align laminate on drying strips*
13.0.4.13 Remove drying strips*
13.0.4.14 Trim edges*
13.0.4.15 Dress edges*

COMPETENCY 13.0.5: Install porches and decks*

COMPETENCY BUILDERS:

13.0.5.1 Determine job requirements*
13.0.5.2 Lay out deck perimeter*
13.0.5.3 Set posts*
13.0.5.4 Plumb and brace posts*
13.0.5.5 Tamp in or cement posts*
13.0.5.6 Cut, position, and attach frame materials*
13.0.5.7 Cut, position, and attach deck materials*

* Advancing
** Futuring

COMPETENCY 13.0.6: Install shutters*

COMPETENCY BUILDERS:

13.0.6.1 Position and attach exterior decorative shutters*
13.0.6.2 Position and attach interior shutters*

COMPETENCY 13.0.7: Construct protective enclosures*

COMPETENCY BUILDERS:

13.0.7.1 Determine job requirements*
13.0.7.2 Select materials and fasteners*
13.0.7.3 Construct winterization cover*
13.0.7.4 Install dust and dirt drop*
13.0.7.5 Construct pedestrian walkway*

COMPETENCY 13.0.8: Perform welding and cutting operations*

COMPETENCY BUILDERS:

13.0.8.1 Wear personal protection gear according to OSHA standards*
13.0.8.2 Determine welding requirements*
13.0.8.3 Use welding and cutting equipment*
13.0.8.4 Use oxyacetylene cutting torch*

COMPETENCY 13.0.9: Frame metal wall partitions*

COMPETENCY BUILDERS:

13.0.9.1 Determine job requirements*
13.0.9.2 Lay out, cut, and install metal track*
13.0.9.3 Lay out, cut, and install studs

UNIT 14: Employability Skills

SUBUNIT 14.1: Career Development

COMPETENCY 14.1.1: Investigate career options

COMPETENCY BUILDERS:

14.1.1.1 Determine interests and aptitudes
14.1.1.2 Identify career options
14.1.1.3 Research occupations matching interests and aptitudes
14.1.1.4 Select career(s) that best match(es) interests and aptitudes
14.1.1.5 Identify advantages and disadvantages of career options, including nontraditional careers
14.1.1.6 Assess differences in wages, annual incomes, and job opportunities based on geographic location
14.1.1.7 Develop a career plan

COMPETENCY 14.1.2: Analyze potential barriers to employment

COMPETENCY BUILDERS:

14.1.2.1 Identify common barriers to employment
14.1.2.2 Develop strategies to overcome employment barriers

UNIT 14: Employability Skills

SUBUNIT 14.2: Decision Making and Problem Solving

COMPETENCY 14.2.1: Apply decision-making techniques in the workplace

COMPETENCY BUILDERS:

14.2.1.1 Identify the decision to be made
14.2.1.2 Compare alternatives
14.2.1.3 Determine consequences of each alternative
14.2.1.4 Make decisions based on values and goals
14.2.1.5 Evaluate decisions

* Advancing
** Futuring

COMPETENCY 14.2.2: Apply problem-solving techniques in the workplace

COMPETENCY BUILDERS:

14.2.2.1 Diagnose the problem and its causes
14.2.2.2 Identify alternatives and their consequences in relation to the problem
14.2.2.3 Examine multicultural and nonsexist dimensions of problem solving
14.2.2.4 Utilize resources to explore possible solutions to the problem
14.2.2.5 Compare and contrast the advantages and disadvantages of each solution
14.2.2.6 Determine appropriate action
14.2.2.7 Evaluate results

UNIT 14: Employability Skills

SUBUNIT 14.3: Work Ethic

COMPETENCY 14.3.1: Evaluate the relationship of self-esteem to work ethic

COMPETENCY BUILDERS:

14.3.1.1 Identify special characteristics and abilities in self and others
14.3.1.2 Identify internal and external factors that affect self-esteem

COMPETENCY 14.3.2: Analyze the relationship of personal values and goals to work ethic both in and out of the workplace

COMPETENCY BUILDERS:

14.3.2.1 Distinguish between values and goals
14.3.2.2 Determine the importance of values and goals
14.3.2.3 Evaluate how values affect goals
14.3.2.4 Identify short-term and long-term goals
14.3.2.5 Prioritize personal goals
14.3.2.6 Describe how personal values are reflected in work ethic
14.3.2.7 Describe how interactions in the workplace affect personal work ethic
14.3.2.8 Examine how life-changes affect personal work ethic

* Advancing
** Futuring

COMPETENCY 14.3.3: Demonstrate work ethic

COMPETENCY BUILDERS:

14.3.3.1 Examine factors that influence work ethic
14.3.3.2 Exhibit characteristics that reflect an appropriate work ethic

UNIT 14: Employability Skills

SUBUNIT 14.4: Job-Seeking Skills

COMPETENCY 14.4.1: Prepare for employment

COMPETENCY BUILDERS:

14.4.1.1 Identify traditional and nontraditional employment sources
14.4.1.2 Utilize employment sources
14.4.1.3 Research job opportunities, including nontraditional careers
14.4.1.4 Interpret equal employment opportunity laws
14.4.1.5 Explain the critical importance of personal appearance, hygiene, and demeanor throughout the employment process
14.4.1.6 Prepare for generic employment tests and those specific to an occupation/organization

COMPETENCY 14.4.2: Design a résumé

COMPETENCY BUILDERS:

14.4.2.1 Identify personal strengths and weaknesses
14.4.2.2 List skills and/or abilities, career objective(s), accomplishments/achievements, educational background, and work experience
14.4.2.3 Demonstrate legible written communication skills using correct grammar, spelling, and concise wording
14.4.2.4 Complete résumé using various formats
14.4.2.5 Secure references

* Advancing
** Futuring

COMPETENCY 14.4.3: Complete and process job application forms

COMPETENCY BUILDERS:

14.4.3.1 Explain the importance of an application form
14.4.3.2 Identify ways to obtain job application forms
14.4.3.3 Describe methods for handling illegal questions on job application forms
14.4.3.4 Demonstrate legible written communications skills using correct grammar, spelling, and concise wording
14.4.3.5 Return application to proper person, request interview, and follow up

COMPETENCY 14.4.4: Demonstrate interviewing skills

COMPETENCY BUILDERS:

14.4.4.1 Investigate interview environment and procedures
14.4.4.2 Explain the critical importance of personal appearance, hygiene, and demeanor
14.4.4.3 Demonstrate question and answer techniques
14.4.4.4 Demonstrate methods for handling difficult and/or illegal interview questions

COMPETENCY 14.4.5: Secure employment

COMPETENCY BUILDERS:

14.4.5.1 Identify present and future employment opportunities within an occupation/organization
14.4.5.2 Research the organization/company
14.4.5.3 Use follow-up techniques to enhance employment potential
14.4.5.4 Compare and evaluate job offers

* Advancing
** Futuring

UNIT 14: Employability Skills

SUBUNIT 14.5: Job Retention Skills

COMPETENCY 14.5.1: Analyze organizational structure of the workplace

COMPETENCY BUILDERS:

14.5.1.1 Identify and evaluate employer expectations regarding job performance, work habits, attitudes, personal appearance, and hygiene
14.5.1.2 Be aware of and obey all company policies and procedures
14.5.1.3 Examine the role/relationship between employee and employer
14.5.1.4 Recognize opportunities for advancement and reasons for termination

COMPETENCY 14.5.2: Maintain positive relations with others

COMPETENCY BUILDERS:

14.5.2.1 Exhibit appropriate work habits and attitude
14.5.2.2 Identify behaviors to establish successful working relationships
14.5.2.3 Cooperate and compromise through teamwork and group participation
14.5.2.4 Identify alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, handicap, or age

UNIT 14: Employability Skills

SUBUNIT 14.6: Job Advancement

COMPETENCY 14.6.1: Analyze opportunities for personal and career growth

COMPETENCY BUILDERS:

14.6.1.1 Determine opportunities within an occupation/organization
14.6.1.2 Compare and contrast other opportunities
14.6.1.3 List benefits of job advancement
14.6.1.4 Evaluate factors involved when assuming a new position within or outside an occupation/organization

* Advancing
** Futuring

COMPETENCY 14.6.2: Exhibit characteristics needed for advancement

COMPETENCY BUILDERS:

14.6.2.1 Display a positive attitude
14.6.2.2 Demonstrate knowledge of a position
14.6.2.3 Perform quality work
14.6.2.4 Adapt to changing situations and technology
14.6.2.5 Demonstrate capability for different positions
14.6.2.6 Participate in continuing education/training programs
14.6.2.7 Respect, accept, and work with all individuals in the workplace

UNIT 14: Employability Skills

SUBUNIT 14.7: Technology in the Workplace

COMPETENCY 14.7.1: Assess the impact of technology in the workplace

COMPETENCY BUILDERS:

14.7.1.1 Cite how past business/industry practices have influenced present business/industry processes
14.7.1.2 Investigate the use of technology in the workplace
14.7.1.3 Analyze how present skills can be applied to learning new technologies

COMPETENCY 14.7.2: Use a variety of technological applications

COMPETENCY BUILDERS:

14.7.2.1 Explore basic mathematical, scientific, computer, and technological principles
14.7.2.2 Use technology to accomplish assigned tasks
14.7.2.3 Create solutions to problems using technical means

* Advancing
** Futuring

UNIT 14: Employability Skills

SUBUNIT 14.8: Lifelong Learning

COMPETENCY 14.8.1: Apply lifelong learning to individual situations

COMPETENCY BUILDERS:

14.8.1.1 Define lifelong learning
14.8.1.2 Identify factors that cause the need for lifelong learning

COMPETENCY 14.8.2: Adapt to change

COMPETENCY BUILDERS:

14.8.2.1 Analyze the effects of change
14.8.2.2 Identify reasons why goals change
14.8.2.3 Describe the importance of flexibility when reevaluating goals
14.8.2.4 Evaluate the need for continuing education/training

UNIT 14: Employability Skills

SUBUNIT 14.9: Economic Education

COMPETENCY 14.9.1: Analyze global enterprise systems

COMPETENCY BUILDERS:

14.9.1.1 Identify characteristics of various enterprise systems
14.9.1.2 Examine the relationship between competition, risk, and profit
14.9.1.3 Illustrate how supply and demand influence price

COMPETENCY 14.9.2: Evaluate personal money management

COMPETENCY BUILDERS:

14.9.2.1 Describe the need for personal management records
14.9.2.2 Identify methods of taxation
14.9.2.3 Analyze how credit affects financial security
14.9.2.4 Compare types and methods of investments
14.9.2.5 Prepare a personal budget
14.9.2.6 Be an informed and responsible consumer
14.9.2.7 Analyze the effects of advertising on the consumer

* Advancing
** Futuring

UNIT 14: Employability Skills

SUBUNIT 14.10: Balancing Work and Family

COMPETENCY 14.10.1: Analyze the effects of family on work

COMPETENCY BUILDERS:

14.10.1.1 Recognize how family values, goals, and priorities are reflected in the workplace
14.10.1.2 Identify present and future family structures and responsibilities
14.10.1.3 Describe personal and family roles
14.10.1.4 Analyze concerns of working parent(s)
14.10.1.5 Examine how family responsibilities can conflict with work
14.10.1.6 Resolve family-related conflicts
14.10.1.7 Explain how to use support systems/community resources to help resolve family-related conflicts

COMPETENCY 14.10.2: Analyze the effects of work on family

COMPETENCY BUILDERS:

14.10.2.1 Identify responsibilities associated with paid and nonpaid work
14.10.2.2 Compare the advantages and disadvantages of multiple incomes
14.10.2.3 Examine how work can conflict with family responsibilities
14.10.2.4 Describe how work-related stress can affect families
14.10.2.5 Identify family support systems and resources

UNIT 14: Employability Skills

SUBUNIT 14.11: Citizenship in the Workplace

COMPETENCY 14.11.1: Exercise the rights and responsibilities of citizenship in the workplace

COMPETENCY BUILDERS:

14.11.1.1 Identify the basic rights and responsibilities of citizenship
14.11.1.2 Examine the history and contributions of all racial, ethnic, and cultural groups

* Advancing
** Futuring

COMPETENCY 14.11.2: Cooperate with others in the workplace

COMPETENCY BUILDERS:

14.11.2.1 Identify situations in which compromise is necessary
14.11.2.2 Examine how individuals from various backgrounds contribute to work-related situations
14.11.2.3 Demonstrate initiative to facilitate cooperation
14.11.2.4 Give and receive constructive criticism to enhance cooperation

UNIT 14: Employability Skills

SUBUNIT 14.12: Leadership

COMPETENCY 14.12.1: Evaluate leadership styles appropriate for the workplace

COMPETENCY BUILDERS:

14.12.1.1 Identify characteristics of effective leaders
14.12.1.2 Compare leadership styles
14.12.1.3 Demonstrate effective delegation skills
14.12.1.4 Identify opportunities to lead in the workplace

COMPETENCY 14.12.2: Demonstrate effective teamwork skills

COMPETENCY BUILDERS:

14.12.2.1 Identify the responsibilities of a valuable group member
14.12.2.2 Exhibit open-mindedness
14.12.2.3 Identify methods of involving each member of a team
14.12.2.4 Contribute to the efficiency and success of a group
14.12.2.5 Determine ways to motivate others

COMPETENCY 14.12.3: Utilize effective communication skills

COMPETENCY BUILDERS:

14.12.3.1 Demonstrate the importance of listening
14.12.3.2 Demonstrate assertive communication
14.12.3.3 Recognize the importance of verbal and nonverbal cues and messages
14.12.3.4 Analyze written material
14.12.3.5 Prepare written material
14.12.3.6 Give and receive feedback
14.12.3.7 Articulate thoughts
14.12.3.8 Use appropriate language

* Advancing
** Futuring

UNIT 14: Employability Skills

SUBUNIT 14.13: Entrepreneurship

COMPETENCY 14.13.1: Evaluate the role of small business in the economy

COMPETENCY BUILDERS:

14.13.1.1 Identify the benefits of small business to a community
14.13.1.2 Analyze opportunities for small business in a community

COMPETENCY 14.13.2: Examine considerations of starting a business

COMPETENCY BUILDERS:

14.13.2.1 Research a business idea
14.13.2.2 Compare various ways to become a small business owner
14.13.2.3 Investigate factors to consider in financing a new business
14.13.2.4 Evaluate entrepreneurship as a career option

* Advancing
** Futuring

Distributed by

Vocational Instructional Materials Laboratory
The Ohio State University
1900 Kenny Road
Columbus, Ohio 43210-1090

BEST COPY AVAILABLE